

Example #12: Determine the efficiency of a motor which has a back EMF of 8.0 V when a source voltage of 12.0 V is supplied.

$$\begin{aligned}\% \text{ efficiency} &= \frac{\text{useful power out}}{\text{power in}} \\ &= \frac{I V_{\text{back}}}{I \mathcal{E}} \times 100 = \frac{8}{12} \times 100 \\ &= 67\%\end{aligned}$$